

BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2018-318-E

In the Matter of)	REBUTTAL TESTIMONY OF
)	JOHN J. SPANOS FOR
Application of Duke Energy Progress, LLC for)	DUKE ENERGY PROGRESS,
Adjustments in Electronic Rate Schedules and)	LLC
Tariffs and Request for an Accounting Order)	

I. INTRODUCTION AND PURPOSE

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT**
2 **POSITION.**

3 A. My name is John J. Spanos and my business address is 207 Senate Avenue, Camp
4 Hill, Pennsylvania. I am employed by Gannett Fleming Valuation and Rate
5 Consultants, LLC as President.

6 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
7 **PROFESSIONAL EXPERIENCE.**

8 A. I have Bachelor of Science degrees in Industrial Management and Mathematics
9 from Carnegie-Mellon University and a Master of Business Administration from
10 York College. Please refer to Exhibit-JJS for my professional memberships,
11 certifications, and other qualifications.

12 **Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY AND EXHIBITS IN**
13 **THIS PROCEEDING?**

14 A. No. However, my depreciation study was included in the direct testimony of Duke
15 Energy Progress, LLC (“DE Progress” or the “Company”) witness Mr. David Doss
16 as Doss Exhibit 2 and the adjusted depreciation rates to the Depreciation Study
17 were included as Doss Exhibit 3 based on the partial settlement agreement entered
18 into with the Public Staff of the North Carolina Utilities Commission (“NCUC”)
19 which was approved by the NCUC in Docket E-2, Sub 1142 and this Commission
20 in Docket No. 2018-204-E.

1 **II. PURPOSE AND SCOPE**

2 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

3 A. The purpose of my rebuttal testimony is to respond to portions of the testimony
4 filed by intervenor Nucor Steel witness Jeffry Pollock regarding his suggested
5 recommendations concerning the theoretical reserve imbalance (which he refers to
6 as a “depreciation reserve surplus”).

7 **III. REBUTTAL TESTIMONY**

8 **Q. PLEASE SUMMARIZE NUCOR STEEL WITNESS POLLOCK’S**
9 **POSITION AND RECOMMENDATION REGARDING THE COMPANY’S**
10 **THEORETICAL RESERVE IMBALANCE.**

11 A. Mr. Pollock proposes to amortize the theoretical reserve imbalance estimated in the
12 depreciation study over a 10-year period, as opposed to using the remaining life
13 technique that is traditionally used to calculate depreciation rates and address
14 theoretical reserve imbalances. The result of his proposal will be to significantly
15 reduce depreciation rates over a 10-year period. Under Mr. Pollock’s proposal,
16 depreciation rates will increase significantly after this 10-year period expires.
17 Customer rates will then be even higher because customers will have to pay a return
18 on the fully amortized amount.

19 **Q. DO YOU AGREE WITH MR. POLLOCK’S RECOMMENDATION?**

20 A. No. Mr. Pollock’s proposal is not a common approach and will not result in an
21 equitable distribution of depreciation charges over the remaining lives of the
22 Company’s assets. Contrary to Mr. Pollock’s assertions regarding fairness and
23 equity, it is his proposal that will produce artificially low depreciation expense for

1 the near term and much higher depreciation rates for all customers in the future.
2 Mr. Pollock's proposal is based on a fundamental misunderstanding of the
3 theoretical and temporary nature of a calculated theoretical reserve and he ascribes
4 too much certainty to a calculated figure based on estimates of events that will
5 transpire over many decades. The remaining life technique, which I have proposed,
6 is the predominant method of calculating depreciation rates and which
7 automatically corrects for any theoretical reserve imbalance. Unlike Mr. Pollock's
8 proposal, the remaining life technique is consistent with the FERC Uniform System
9 of Accounts ("USofA") (which the Commission has adopted) and is the approach
10 that will produce more equitable and stable rates over the remaining lives of the
11 Company's assets.

12 **II. THEORETICAL RESERVE IMBALANCE**

13 **1. Introduction**

14 **Q. WHAT IS DEPRECIATION?**

15 A. Depreciation is defined in the FERC USofA):

16 12. Depreciation, as applied to depreciable electric plant, means the loss in
17 service value not restored by current maintenance, incurred in connection
18 with the consumption or prospective retirement of electric plant in the
19 course of service from causes which are known to be in current operation
20 and against which the utility is not protected by insurance. Among the
21 causes to be given consideration are wear and tear, decay, action of the
elements, inadequacy, obsolescence, changes in the art, changes in demand

1 and requirements of public authorities.¹

2 **Q. WHAT IS THE OBJECTIVE OF DEPRECIATION?**

3 A. The objective of depreciation is to allocate, in a systematic and rational manner, the
4 full cost of an asset (original cost less net salvage) over its service life. The USofA
5 requires this in General Instruction 22-A:

6 Method. Utilities must use a method of depreciation that allocates in a
7 systematic and rational manner the service value² of depreciable property
8 over the service life of the property.

9 Thus, the USofA confirms that depreciation represents the allocation of the full
10 costs of a company's assets (original cost less any net salvage) over their service
11 lives – that is, over the period of time the assets are providing service. Costs are
12 allocated over the service lives of the assets so that customers pay for the costs of
13 the assets that provide them service.

14 **Q. AREN'T DEPRECIATION RATES SUBJECT TO CHANGE OVERTIME?**

15 A. Yes, depreciation is necessarily a forecast of future events (such as the actual
16 retirement date of a power plant) that will occur many years in the future. It is
17 therefore very difficult to perfectly allocate costs equally over the lives of a utility
18 company's entire asset base.

19 *Public Utility Depreciation Practices*, published by the National
20 Association of Regulatory Utility Commissioners ("NARUC") explains this
21 concept:

22 The straight-line method is sometimes spoken of as the
23 method of equal annual depreciation charges. For item or

¹ 18 C.F.R. 101 (FERC USofA), Definition 12.

² The USofA defines service value as the original cost less net salvage.

1 unit accounting, this is true if the service life and net salvage
2 are correctly estimated from the beginning of placement in
3 service. However, because of changes in depreciation rates,
4 which reflect changing conditions of service and causes of
5 retirement during the service life, the equal annual charges
6 are not usually made even for unit depreciation. With group
7 properties, equal annual charges seldom occur because,
8 although the rate may be constant, the rate is applied to a
9 changing plant balance by virtue of retirements and
10 additions. Thus, the straight-line method is best described
11 as the method of constant rate applied to the book cost of
12 plant in service between depreciation review periods.³

13 Mr. Pollock appears to assume that depreciation charges either will or
14 should be perfectly equal throughout the lives of the Company's assets. However,
15 as NARUC explains, in real-world circumstances this is impossible. Causes of
16 retirement and service lives change and evolve over time and as a result no one
17 should expect a perfectly even distribution of charges over the lives of a Company's
18 assets. A corollary of this is that one should not expect the theoretical reserve and
19 book reserve to be the same or even similar. Instead, a theoretical reserve
20 imbalance will almost always be present. Further, the theoretical reserve imbalance
21 can change significantly from one study to another as service lives and net salvage
22 changes, additional activity occurs, and new information becomes available.
23 Indeed, as I will discuss, there are examples of theoretical reserve "surpluses" that
24 became real-world reserve deficiencies in due course as assets have been retired
25 earlier than expected.

26 The dynamic nature of depreciation rates over the lives of assets due to
27 changing conditions is one of the reasons that the remaining life technique is the
28 preferred approach for determining depreciation, as it allows for systematic and

³ NARUC, *Public Utility Depreciation Practices*, 1996, p. 56.

1 rational revisions to depreciation rates as more information becomes available for
2 each successive depreciation study.

3 **2. The Theoretical Reserve Imbalance**

4 **Q. HOW IS YOUR TESTIMONY STRUCTURED TO ADDRESS MR.**
5 **POLLOCK'S RECOMMENDATION?**

6 A. I address Mr. Pollock's proposals in the sections that follow. I first address a
7 number of general depreciation and ratemaking issues relative to Mr. Pollock's
8 proposed adjustment. I then discuss a number of specific claims made by Mr.
9 Pollock regarding DE Progress' theoretical reserve imbalances.

10 **Q. HAS MR. POLLOCK CONDUCTED A DEPRECIATION STUDY IN THIS**
11 **PROCEEDING?**

12 A. No. My depreciation study, (Doss Exhibit 2) is the only one presented in this
13 proceeding.

14 **Q. IS MR. POLLOCK'S PROPOSAL CONSISTENT WITH THE**
15 **DEPRECIATION RATES ADOPTED FOR THE COMPANY IN NORTH**
16 **CAROLINA?**

17 A. No. It is noteworthy that in the Company's most recent rate case in North Carolina,
18 two depreciation witnesses reviewed my study and testified on depreciation.
19 Neither proposed an accelerated amortization of the theoretical reserve imbalance,
20 as Mr. Pollock has proposed. As a result, his proposal would result in a very
21 different treatment of depreciation for the Company's assets in South Carolina than
22 in North Carolina. Additionally, the Company's affiliate, Duke Energy Carolinas
23 LLC's ("DE Carolinas") also has a rate case before the Commission. No party has

1 proposed an amortization of the theoretical reserve in that case. Thus, Mr.
2 Pollock's proposal would also result in a different treatment from that of Duke
3 Energy Carolinas.

4 **Q. WHAT IS A THEORETICAL RESERVE IMBALANCE?**

5 **A.** A theoretical reserve imbalance ("TRI" or "imbalance") is calculated as the
6 difference between a company's book accumulated depreciation, or book reserve,
7 and the calculated accrued depreciation, or theoretical reserve.

8 I should note that different terms have been used for the theoretical reserve
9 imbalance, including "theoretical reserve variance," and "theoretical excess
10 depreciation reserve." Mr. Pollock uses the term "reserve surplus" to indicate when
11 a TRI is positive (i.e., the book reserve is greater than the theoretical reserve) and
12 the term "reserve deficiency" to indicate when a TRI is negative. For this testimony
13 I will use the term "theoretical reserve imbalance," which is consistent with the
14 terminology used in NARUC's *Public Utility Depreciation Practices* text. In my
15 view, the term "reserve surplus" is a misleading term because it implies that the
16 theoretical reserve is a more precise figure than it actually is. The term "reserve
17 surplus" can also be misleading because it can imply that accumulated depreciation
18 represents a pool of money or funds that can be used for various financial
19 objectives.

20 **Q. WHAT IS THE BOOK RESERVE?**

21 **A.** The book reserve, also referred to as the "book accumulated depreciation" or the
22 "accumulated provision for depreciation," is a running total of historical
23 depreciation activity. It is equal to the historical depreciation accruals, less

1 retirements and cost of removal, plus historical gross salvage. The book reserve
2 also represents a reduction to the original cost of plant when calculating rate base.

3 **Q. WHAT IS THE THEORETICAL RESERVE?**

4 A. The theoretical reserve is an estimate of the accumulated depreciation based on the
5 current plant balances and depreciation parameters (service life and net salvage
6 estimates) at a specific point in time. The theoretical reserve technically represents
7 the portion of the depreciable cost which will not be allocated to expense through
8 future whole life depreciation accruals, if current forecasts of service life
9 characteristics and net salvage materialize and are used as a basis for depreciation
10 accounting.

11 **Q. HOW IS THE THEORETICAL RESERVE CALCULATED?**

12 A. Using the average service life procedure employed for this study, the theoretical
13 reserve is calculated for each vintage in each depreciable group using the following
14 formula:

$$\textit{Theoretical Reserve} = (\textit{Original Cost} - \textit{Net Salvage}) \times (1 - \frac{\textit{Remaining Life}}{\textit{Average Service Life}})$$

15 The remaining life and average service life are determined for each vintage (year
16 of installation) based on the survivor curve estimate (life and dispersion pattern).

17 The theoretical reserve for an account is equal to the sum of the theoretical reserve
18 amounts for each vintage.

19 **Q. WHY IS IT CALLED THEORETICAL?**

20 A. The reserve is called theoretical because it is not based upon actual recorded
21 depreciation resulting from the application of depreciation rates used by the

1 Company and approved by the Commission. Instead, it is an estimate based on the
2 formula described previously.

3 **Q. WHY DOES ONE CALCULATE A THEORETICAL RESERVE?**

4 A. A theoretical reserve is calculated as an analytical tool or benchmark to identify
5 how current estimates compare to the provisions using previous estimates in
6 calculating annual depreciation. It can also be used as a basis to allocate the book
7 reserve to accounts, subaccounts or vintages of plant. A theoretical reserve
8 calculation provides a snapshot of the reserve, valid only at the time it is calculated,
9 since any changes in the proposed parameters or plant and reserve activity change
10 the theoretical reserve.

11 **Q. MR. POLLOCK ARGUES THAT THE DIFFERENCE IN THE BOOK AND**
12 **THEORETICAL RESERVE REPRESENTS A “SURPLUS” IN THE**
13 **ACCUMULATED PROVISION FOR DEPRECIATION. IS THIS**
14 **ACCURATE?**

15 A. No. While there is a difference between book accumulated depreciation and the
16 theoretical depreciation reserve, this amount is not a “surplus.” It is simply a
17 theoretical calculation of the difference between the actual accumulated
18 depreciation based on the Company’s historical experience and Commission
19 approved depreciation rates, and a theoretical amount based solely on the proposed
20 depreciation parameters. Depreciation is a prospective calculation, and thus
21 changes as life and net salvage parameters change in future studies. As the
22 Company moves through time with varying experience, this difference can change
23 positively or negatively.

1 **Q. WHAT IS MR. POLLOCK’S SPECIFIC PROPOSAL IN THIS CASE?**

2 A. Mr. Pollock is proposing to amortize the calculated theoretical depreciation reserve
3 imbalance more rapidly than results from using the more widely accepted
4 remaining life technique. The remaining life technique has been accepted by the
5 Commission for utility companies in the past. To my knowledge, Mr. Pollock’s
6 approach has not been approved in South Carolina.

7 Mr. Pollock’s proposal would significantly reduce depreciation expense for
8 the next ten years, but then result in higher depreciation expense subsequent to that
9 period of time. His recommendation is, therefore, best considered as a subsidy to
10 ratepayers who will receive service for the next ten years, as this group of customers
11 will pay significantly less for their service than any other generation of customers.

12 **Q. IS MR. POLLOCK’S APPROACH COMMON PRACTICE IN THE**
13 **INDUSTRY?**

14 A. No. Most utilities, Commissions and depreciation texts agree that theoretical
15 reserve differences will be and are best resolved using the remaining life method. I
16 will discuss the acceptance of proposals similar to Mr. Pollock’s in more detail in
17 the next section.

18 **3. Treatment of Theoretical Reserve Imbalances**

19 **Q. MR. POLLOCK CLAIMS THAT THE CONTINUED USE OF THE**
20 **REMAINING LIFE TECHNIQUE IS NOT THE BEST METHOD TO**
21 **ADDRESS WHAT HE ALLEGES TO BE A “RESERVE SURPLUS.” DO**
22 **YOU AGREE?**

23 A. No. I should first make clear that the remaining life technique is the most widely

accepted approach and should be used, unless unique and significant circumstances otherwise warrant deviation from this practice. No such circumstances exist for DEP therefore there is no reason to deviate from the remaining life technique. Instead, the theoretical reserve imbalance developed over many years. The TRI has not developed in the recent past. It therefore should not be resolved in a short period of time, as Mr. Pollock proposes. It is more appropriate to allocate costs through depreciation over the remaining time the Company's assets will be in service using the remaining life technique. Mr. Pollock's approach is a short-term subsidy for today's customers, which will result in increased costs for future customers.

Q. REFERRING TO AUTHORITATIVE SOURCES, WHAT DOES THE NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS (NARUC) SAY REGARDING THIS ISSUE?

A. NARUC makes a number of comments regarding theoretical reserve imbalances in its publication *Public Utility Depreciation Practices*. On page 189, NARUC states:

When a depreciation reserve imbalance exists, one should investigate why past depreciation rates, average service lives, salvage, or cost of removal amounts differ from the current estimates. Care should be taken to analyze these effects before correcting for the reserve imbalances. Instances occur where subsequent experience shows the original estimates no longer to be appropriate. It should be noted that only after plant has lived its entire useful life will the true depreciation parameters become known.⁴

Q. HAVE YOU INVESTIGATED WHAT CAUSED THE THEORETICAL RESERVE IMBALANCE?

A. Yes. One reason is that changes in service life and net salvage estimates have occurred over time due to the normal depreciation study process. These have

⁴ *Public Utility Depreciation Practices*, NARUC, 1996, pp. 189.

1 occurred over many decades and are not a recent occurrence. It is therefore most
2 appropriate to use the remaining life technique, which in effect takes action to
3 correct the reserve imbalances over the remaining period of time the assets will be
4 in service. This is most consistent with the fact that the theoretical reserve
5 imbalance developed over many years. It should be clear from the passage above
6 that NARUC recommends caution before making any significant adjustments, such
7 as those made with Mr. Pollock's proposal.

8 **Q. ARE THE THEORETICAL RESERVE IMBALANCES CALCULATED BY**
9 **MR. POLLOCK CORRECT TO USE AS A BASIS FOR HIS PROPOSED**
10 **ADJUSTMENT?**

11 A. No. To perform his calculations, Mr. Pollock has used theoretical reserve amounts
12 calculated in the depreciation study. However, he does not observe that, although
13 the Asheville coal units will be retired by January 2020, the theoretical reserve
14 amounts calculated for the Company's Asheville coal units use a retirement date of
15 2027. The later retirement date was used to calculate depreciation rates in order to
16 mitigate a large increase in depreciation due to the near-term closure of Asheville
17 Units 1 and 2. However, the use of a 2027 retirement date in the depreciation
18 calculations means that the theoretical reserve amounts calculated based on this
19 retirement date are not reflective of the actual theoretical reserve for this facility.
20 Because the plant will be retired within the next year, its theoretical reserve today
21 would reflect the plant being nearly fully depreciated (meaning that the
22 accumulated depreciation would actually be greater than the original cost because
23 net salvage also needs to be recovered).

1 However, Mr. Pollock's proposal is based on a 2027 retirement date, from
2 which he concludes that the Asheville plant has a theoretical reserve "surplus."
3 This is incorrect – there is actually a reserve deficiency at Asheville. Mr. Pollock's
4 proposal would artificially reduce depreciation expense for Asheville even though
5 the plant will be retired in the short term. This issue not only illustrates the overall
6 problem with Mr. Pollock's proposal, but also demonstrates that there are problems
7 with the theoretical reserve amounts on which he bases his proposal. It further
8 demonstrates that Mr. Pollock has not investigated the theoretical reserve
9 imbalance with the proper care set forth in NARUC's guidance.

10 **Q. DOES NARUC PROVIDE ADDITIONAL GUIDANCE ADDRESSING THE**
11 **REMAINING LIFE TECHNIQUE?**

12 A. Yes. NARUC also notes that:

13 The desirability of using the remaining life technique is that any
14 necessary adjustments of depreciation reserves, because of changes
15 to the estimates of life and net salvage, are accrued automatically
16 over the remaining life of the property. Once commenced,
17 adjustments to the depreciation reserve, outside of those inherent in
18 the remaining life rate would require regulatory approval.⁵

19 Combined with the NARUC passages cited earlier that urge caution, my
20 interpretation of NARUC's recommendation is that for companies like DE Progress
21 that use the remaining life technique, any accelerated amortization such as proposed
22 by Mr. Pollock must be based on very unique circumstances that justify specific
23 Commission approval. Not only do such circumstances not exist for DE Progress,
24 but Mr. Pollock has not even used the proper theoretical reserve amounts for his
25 recommendation.

⁵ NARUC, p. 65.

1 **Q. HAS THE COMMISSION ACCEPTED THE USE OF THE REMAINING**
2 **LIFE TECHNIQUE FOR DE PROGRESS?**

3 A. Yes. The Company has used the remaining life technique for developing
4 depreciation rates for many years.

5 **Q. DO YOU BELIEVE THERE ARE UNIQUE CIRCUMSTANCES FOR DE**
6 **PROGRESS TO JUSTIFY AN ADJUSTMENT SUCH AS PROPOSED BY**
7 **MR. POLLOCK?**

8 A. No. As I have explained, unique or significant circumstances have not caused the
9 theoretical reserve imbalance that would require any approach other than the use of
10 the remaining life technique. Further, not only has Mr. Pollock not identified any
11 such circumstances, he has not even bothered to investigate the causes of the
12 theoretical reserve imbalance. The estimated theoretical reserve imbalance has
13 developed over a long time due to the normal process of estimating depreciation
14 through periodic depreciation studies. There is nothing unique to this occurrence.
15 The estimates today are simply different from those in the past due to the different
16 information that is available upon which the depreciation estimates are based. Such
17 a circumstance of changing estimates occurs with every utility, as the estimation of
18 depreciation involves predicting events that will occur many decades into the
19 future.

1
2 **Q. ARE YOU FAMILIAR WITH ANY CASES IN WHICH A PROPOSAL BY**
3 **MR. POLLOCK FOR AN ACCELERATED AMORTIZATION OF THE**
4 **THEORETICAL RESERVE IMBALANCE WAS REJECTED BY A**
5 **COMMISSION?**

6 A. Yes. Mr. Pollock and I were both involved in a case for MidAmerican Energy in
7 Iowa. Mr. Pollock represented Deere & Company (“Deere”) in that case and made
8 a proposal similar to his recommendation in the instant case to amortize a
9 theoretical reserve imbalance over a short period of time. Mr. Pollock’s proposal
10 was rejected by the Iowa Utilities Board, which stated:

11 Deere’s proposed adjustment is based on a theoretical account
12 balance that will change over time for many reasons and it will not
13 be known until an asset is retired whether any theoretical surplus or
14 deficiency is accurate. MidAmerican’s method uses the remaining
15 life of an asset, which results in the theoretical reserve for any
16 individual asset being reduced to zero by the time it is retired.

17
18 The Board is concerned that under Deere’s proposal, current
19 customers would receive a benefit at the expense of future
20 ratepayers because of the significant increase in rates (about \$90
21 million) that MidAmerican projects in year nine if Deere’s proposal
22 is adopted. This increase would subject future customers to an
23 unwarranted increase for the benefit of today’s customers.
24 MidAmerican’s remaining life method to deal with any theoretical
25 reserves moderates the recovery pattern and does not contribute to
26 volatility in rates.

27
28 The Board will reject Deere’s adjustment. MidAmerican’s
29 depreciation proposal does not require a theoretical reserve but uses
30 the well-established remaining life method for depreciation, with the
31 theoretical reserve calculated only to compare current events to
32 previous estimates that were used to calculate depreciation.
33 MidAmerican’s remaining life method is consistent with GAAP
34 accounting and has been used in prior depreciation studies.⁶

⁶ Order in Iowa Docket No. RPU-2013-0004, p. 19.

1 **Q. ON PAGE 30 OF HIS TESTIMONY, MR. POLLOCK CLAIMS HIS**
2 **PROPOSAL IS “CONSISTENT WITH ACCEPTED REGULATORY**
3 **ACCOUNTING PRACTICE AND PRECEDENT.” DO YOU AGREE WITH**
4 **HIS STATEMENT?**

5 A. No. To the contrary, the use of an accelerated amortization of a TRI is not the
6 common approach in states that use the remaining life technique. Further, as I will
7 discuss, FERC has held that an amortization such as proposed by Mr. Pollock is not
8 consistent with the “systematic and rational” requirement in the USofA.

9 **Q. DO YOU AGREE THAT THE CASES CITED BY MR. POLLOCK**
10 **SHOULD BE PRECEDENT SETTING IN SOUTH CAROLINA?**

11 A. No. First, the cases he cites are isolated cases and in the vast majority of
12 depreciation studies the remaining life technique has been used. Additionally, two
13 of the cases cited by Mr. Pollock do not even appear to specifically address a
14 theoretical reserve imbalance. Based on a review of the Alabama Power case cited
15 by Mr. Pollock, Alabama Power had proposed that a regulatory asset related to
16 Purchase Power Agreements be offset by future decreases in depreciation rates,
17 which the Company anticipated in the next depreciation study, as opposed to an
18 explicit amortization of the theoretical reserve imbalance.⁷ The Georgia Power
19 case cited by Mr. Pollock was related to accumulated depreciation specific to cost
20 of removal and the cost of removal related proposals in that case. That case,
21 therefore, also did not deal with the same issue as his proposal in this case.

⁷ There does appear to be an earlier case in which Alabama Power proposed to use its cost of removal reserve to offset other regulatory assets. However, this too is different from Mr. Pollock’s proposal and does not appear to be based on a calculated theoretical reserve imbalance.

1 Further, for at least two of the companies cited by Mr. Pollock, the
 2 approach of amortizing the theoretical reserve imbalance over a shorter period of
 3 time, while adopted by the Florida Public Service Commission, was not accepted
 4 by FERC. Progress Energy Florida (now Duke Energy Florida) also filed its
 5 depreciation study before the Federal Energy Regulatory Commission ("FERC") in
 6 Docket No. ER11-2584-000. FERC stated in its Order:

7 In this regard we note that this Commission has addressed any
 8 alleged excess or deficiency in depreciation reserves through
 9 adjustment of depreciation rates that eliminate such excess or
 10 deficiency over the remaining life of a utility's plant, rather than any
 11 shorter period.⁸

12 In other words, an accelerated amortization of the reserve was not accepted.

13 Additionally, FERC further stated in Docket No. ER11-3584-000 that:

14 In Order No. 618 and in the February 28 Order, the Commission
 15 stated that the cost of property used in utility operations should be
 16 allocated in a "systematic and rational manner" to periods during
 17 which the property is used in utility operations, i.e., over the
 18 property's remaining estimated useful service life. For this reason,
 19 changes in asset depreciation estimates, including cost of removal,
 20 should be made prospectively over the asset's remaining life.
 21 Florida Power proposes to adjust its depreciation reserves by
 22 \$65,840,613 in 2010 and intends to adjust its depreciation reserves
 23 by varying amounts in 2011 through 2013 rather than allocating the
 24 excess depreciation reserves over the remaining service lives of the
 25 related utility plant. While these adjustments may be acceptable for
 26 retail ratemaking purposes, they do not conform to our requirements
 27 for allocating the costs of utility plant over their service lives.
 28 Accordingly, we will direct Florida Power to reinstate all such
 29 adjustments to its depreciation reserves (Account 108). Florida
 30 Power must also re-file its 2010 FERC Form No. 1 to reflect the
 31 restatement of its depreciation reserves.⁹

32 Florida Power and Light ("FPL") also does not use the treatment proposed by Mr.

⁸ Order in FERC Docket No. ER11-2584-000, p. 10, footnote 44.

⁹ Order in FERC Docket No. ER11-3584-000, paragraph 9. (Emphasis added).

1 Pollock for its FERC depreciation rates.

2 **Q. BASED ON FERC'S DECISIONS CITED ABOVE, DOES FERC**
3 **CONSIDER MR. POLLOCK'S PROPOSAL CONSISTENT WITH THE**
4 **UNIFORM SYSTEM OF ACCOUNTS?**

5 A. No. The cited passages above make clear FERC's opinion that the USofA requires
6 that any reserve imbalances be allocated over the remaining lives of a Company's
7 assets (e.g., by using the remaining life technique). Mr. Pollock's proposal would
8 not allocate the Company's costs over the service lives of its assets in a systematic
9 and rational manner, and therefore would not be consistent with the USofA.

10 **Q. DO ANY OF THE CASES CITED BY MR. POLLOCK DEMONSTRATE**
11 **YOUR POINT THAT THE THEORETICAL RESERVE IS AN ESTIMATE**
12 **AND CAN CHANGE OVER TIME?**

13 A. Yes. Pollock cites the order from FPL's 2009 rate case, in which the Florida Public
14 Service Commission adopted the amortization of the theoretical reserve imbalance
15 calculated in the order in that case. A portion of the theoretical reserve imbalance
16 calculated in that case was a theoretical reserve "surplus" of approximately \$72
17 million for the St. John's River Power Park ("SJRP"). The theoretical reserve
18 imbalance calculated in that case anticipated a 50-year life span for SJRP, which
19 corresponded with a retirement date of 2038. However, the SJRP plant was closed
20 last year in 2018. The theoretical reserve calculated in the 2009 FPL rate case did
21 not end up being correct, as the plant's service life was shorter than anticipated in
22 the 2009 FPL rate case. This example illustrates the point that a theoretical reserve
23 is a point in time calculation based on estimates which can, and do, change over

1 time. What had been calculated as a “surplus” in FPL’s 2009 rate case did not
2 actually end up being a “surplus” at all. Instead, SJRPP’s costs were not fully
3 recovered through depreciation by the time the plant was retired.

4 **4. The Straight Line Depreciation Method is Appropriate and Fair.**

5 **Q. MR. POLLOCK STATES THAT THE THEORETICAL RESERVE**
6 **IMBALANCE MEANS THAT “PAST AND CURRENT CUSTOMERS ARE**
7 **SUBSIDIZING FUTURE CUSTOMERS.”¹⁰ IS MR. POLLOCK**
8 **CORRECT?**

9 A. No. Mr. Pollock’s statement fundamentally misunderstands the Company’s
10 theoretical reserve imbalance. The theoretical reserve imbalance developed over
11 the entire history of the Company. It is not the result of what current customers
12 have paid, but also many previous generations of customers. It also does not mean
13 that there have been intergenerational subsidies. Theoretical reserve imbalances
14 arise as service life and net characteristics evolve over time and do not necessarily
15 mean that any generation of customers “over-” or “under-paid.” Further, as
16 discussed above for FPL’s SJRPP plant, lives of assets could end up being shorter
17 than anticipated in a depreciation study, resulting in a theoretical reserve “surplus”
18 actually being a “deficiency.”

19 **Q. HAS MR. POLLOCK PROVIDED ANY SPECIFIC EVIDENCE TO**
20 **DEMONSTRATE THAT THE THEORETICAL RESERVE IMBALANCE**
21 **MEANS THAT OVERPAYMENTS HAVE OCCURRED?**

22 A. No. Instead, a reading of his testimony gives the impression that he regards a

¹⁰ Direct Testimony of Jeffry Pollock, p. 9, lines 3-4.

1 theoretical reserve imbalance as resulting in “intergenerational inequity” simply
2 because the theoretical reserve imbalance exists.

3 **Q. DOES THE EXISTENCE OF THE THEORETICAL RESERVE SUGGEST**
4 **THERE IS A PROBLEM THAT MUST BE REMEDIED?**

5 A. No. The theoretical reserve imbalance and the theoretical reserve are the result of a
6 calculation that incorporates a number of assumptions, and that the theoretical
7 reserve itself is a simple model of the very complex history of transactions that have
8 resulted in current accumulated depreciation balances. For this reason, the
9 theoretical reserve almost never matches the book reserve. The mere existence of a
10 theoretical reserve is a function of the difficulty of modeling real world utility
11 property and forecasting service life and net salvage. The theoretical reserve should
12 not be confused with the “correct” book reserve.

13 **Q. IF THE THEORETICAL RESERVE IS NOT A PERFECT**
14 **MEASUREMENT OF ACCUMULATED DEPRECIATION, WHY IS IT**
15 **CALCULATED?**

16 A. The calculation of a theoretical reserve is actually not required, nor is it necessary,
17 when using the remaining life technique (as is the case for DE Progress) and is not
18 used in the remaining life formula. Some analysts do not even calculate the
19 theoretical reserve when performing depreciation studies that are based on the
20 remaining life technique.¹¹ While the theoretical reserve can serve as a rough
21 benchmark as to how current estimates compare to depreciation estimates and plant

¹¹ Gannett Fleming’s calculations use the theoretical reserve for each vintage of plant to allocate the book reserve to each vintage. However, the theoretical reserve is not used as a basis for any other remaining life calculations. Other depreciation software does not allocate the book reserve to the vintage, and thus does not use the theoretical reserve for the calculations.

1 and reserve activity in the past, it should not be considered the “correct” reserve.
2 Authoritative depreciation texts are clear that the status of the book reserve as
3 compared to the theoretical reserve is not a prescription for any adjustments to the
4 reserve.

5 **Q. WHAT DOES MR. POLLOCK’S CLAIMS ASSUME?**

6 A. There are two important implicit assumptions inherent in his claims that I will
7 discuss here. These assumptions are:

- 8 1. Estimates made today are completely accurate.
- 9 2. Previous depreciation rates for DE Progress, as accepted by the
10 Commission, were “incorrect.”

11
12 I will begin with the first assumption, as the problems with this assumption help to
13 demonstrate some of the problems with the second.

14 **Q. IS THE ASSUMPTION THAT ESTIMATES MADE TODAY ARE**
15 **COMPLETELY ACCURATE A VALID ASSUMPTION?**

16 A. No. The estimation of depreciation is a very complex and difficult task, requiring
17 the forecast of events (e.g. retirements and net salvage) to take place decades in the
18 future. Because the future contains a great deal of uncertainty, the assumption that
19 these estimates are completely accurate is not reasonable.

20 **Q. DO ANY AUTHORITATIVE SOURCES AGREE WITH THIS**
21 **ASSESSMENT?**

22 A. Absolutely. Again, NARUC states that:

23 Instances occur where subsequent experience shows the original
24 estimates no longer to be appropriate. It should be noted that only
25 after plant has lived its entire useful life will the true depreciation
26 parameters become known.¹²

¹² NARUC, p. 189.

1 Thus, NARUC is quite clear that estimates should not be considered to be
2 completely accurate. It follows that the existence of a theoretical reserve imbalance
3 should not be considered intergenerational inequity.

4 Frank K. Wolf and W. Chester Fitch's *Depreciation Systems* (Wolf and
5 Fitch) is another highly regarded, authoritative depreciation text. Wolf and Fitch
6 also comment on the matter, stating:

7 The CAD [theoretical reserve] is not a precise measurement. It is
8 based on a model that only approximates the complex chain of
9 events that occur in an actual property group and depends upon
10 forecasts of future life and salvage. Thus, it serves as a guide to, not
11 a prescription for, adjustments to the accumulated provision for
12 depreciation.¹³

13 Given the complexities and uncertainties involved in estimating the future,
14 we should not assume that the estimates in a depreciation study are completely
15 accurate (which is an assumption inherent to Mr. Pollock's proposal). They are the
16 best estimates given the best information available, but we will not know for sure
17 that they are correct until the plant has lived its entire useful life.¹⁴ In future studies
18 shorter lives or more negative net salvage may be appropriate, at which point a
19 large negative theoretical reserve imbalance (or reserve deficiency) would develop
20 if Mr. Pollock's proposal were adopted. This would result in an even larger
21 increase in rates (whether the remaining life technique or another reserve
22 amortization were used). The remaining life technique provides for more stability
23 in rates by allocating costs over the remaining lives, whereas Mr. Pollock's

¹³ *Depreciation Systems* (1994), Frank K. Wolf and W. Chester Fitch, p. 86.

¹⁴ To put this in context, the average service life estimates in the depreciation study for many accounts are in the 50 to 60-year range. These are only averages though, and the estimates mean that some plant will last longer than 100 years. Thus, based on the service life estimates in the depreciation study, we will not know for certain if the estimates are correct for over 100 years.

1 approach would lead to much more volatility.

2 **Q. PLEASE ADDRESS THE SECOND ASSUMPTION, THAT PRIOR**
3 **ESTIMATES WERE “INCORRECT.”**

4 A. An understanding that the accuracy of depreciation estimates is unknown until all
5 plant has lived its full useful life demonstrates the fallacy of the assumption that the
6 existence of a reserve imbalance means that prior estimates were wrong and
7 previous customers are subsidizing costs for future customers. To make such an
8 assumption inherently assumes that today we have perfect knowledge of the future,
9 which is an unrealistic assumption. Yet this is the implicit assumption in Mr.
10 Pollock’s recommendation to amortize the theoretical reserve imbalance over a
11 relatively short period of time.

12 **Q. ARE THERE ADDITIONAL ISSUES WITH THE ASSUMPTION THAT**
13 **PRIOR ESTIMATES HAVE BEEN WRONG?**

14 A. Yes. As noted above, Wolf and Fitch explain that the theoretical reserve is a simple
15 model of a “complex chain of events.” Many of the simplifying assumptions¹⁵
16 inherent to the theoretical reserve model are not necessarily reasonable assumptions
17 regarding actual real-world experience.

18 **Q. WHAT ASSUMPTIONS ARE INHERENT TO THE THEORETICAL**
19 **RESERVE MODEL?**

20 A. One key assumption is that all vintages of plant have the same life characteristics.

¹⁵ The assumptions discussed here are related primarily to assumptions regarding life characteristics. However, one assumption made regarding the way net salvage is normally calculated in the theoretical reserve is that average and future net salvage are equal. This is in fact often not the case, and future net salvage is typically greater than average net salvage. The effect of this assumption is therefore normally to understate the theoretical reserve and overstate an estimated theoretical reserve “excess.”

1 While the depreciable groups studied in a depreciation study (based largely on the
2 FERC USofA) are relatively homogeneous, there is variety within the accounts and
3 not all assets, much less vintages of assets, will necessarily have the same life
4 characteristics. For example, different materials may have been used for overhead
5 conductors at different periods of time. If these different materials have different
6 life characteristics, then the service life estimates will change naturally over time
7 as the composition of types of assets in the overhead conductors account changes
8 over time. For this reason, service life estimates today may be longer than would
9 have been appropriate ten or twenty years ago. Because the service life estimate
10 for the account is estimated for assets in service today, this natural change would
11 result in a theoretical reserve imbalance due to the changing life characteristics over
12 time. However, this does not necessarily mean that previous depreciation rates
13 were too high, as Mr. Pollock implies. Instead, it simply means that the life
14 characteristics for the account are dynamic and have changed over time.

15 In other words, given that different vintages of plant can have different life
16 characteristics, it is incorrect to assume that the life estimates made today should
17 have applied in the past for the entire history of the Company. Yet this is an
18 assumption of the theoretical reserve model and an assumption Mr. Pollock makes
19 in his recommendation for the theoretical reserve imbalance.

20 **Q. WHAT IS ANOTHER ASSUMPTION INHERENT TO THE**
21 **THEORETICAL RESERVE MODEL?**

22 A. Another assumption is that life characteristics do not change over time. I have
23 explained that different vintages of plant can have different life characteristics.

1 However, the life characteristics themselves can change over time as well. For
2 example, operational practices, maintenance practices and management decisions
3 can change life characteristics over time. A good example is meters. An estimate
4 that meters would last for 30 years was a reasonable estimate three or four decades
5 ago. However, experience has shown that this was not a reasonable assumption ten
6 years ago. The assets themselves did not change - the electromechanical meters 30
7 years ago were similar to those in service ten years ago - and the physical
8 characteristics of these meters did not change. However, other considerations such
9 as functionality or technology did change, which resulted in a significant change in
10 life characteristics.

11 This example illustrates that life characteristics do change over time and the
12 theoretical reserve is far too simplistic an assumption from which to draw the
13 conclusion that previous depreciation rates resulted in an overpayment.

14 **Q. DO YOU HAVE ANY OTHER COMMENTS RELATED TO THE CLAIM**
15 **THAT PREVIOUS DEPRECIATION RATES WERE TOO HIGH?**

16 A. Yes. The Company's historical depreciation rates have been based on periodic
17 depreciation studies in which the Company has presented what it considers to be
18 the best estimates of depreciation based on the information available at the time.
19 Other parties have also had the opportunity to present their estimates based on the
20 same information. Based on this process, this Commission has concluded that the
21 depreciation rates used by the Companies were reasonable based on the information
22 available at the time. That is, the book reserve for DE Progress is based on the
23 depreciation rates that the Commission has historically recognized to be just and

1 reasonable.

2 **5. Impact of Theoretical Reserve Imbalance Proposals**

3 **Q. PLEASE SUMMARIZE THIS SECTION OF YOUR TESTIMONY.**

4 A. The comparison I present in this section demonstrates that while Mr. Pollock's
5 proposal may lead to lower depreciation rates for a short period, the end result will
6 be higher depreciation rates for customers in the future.

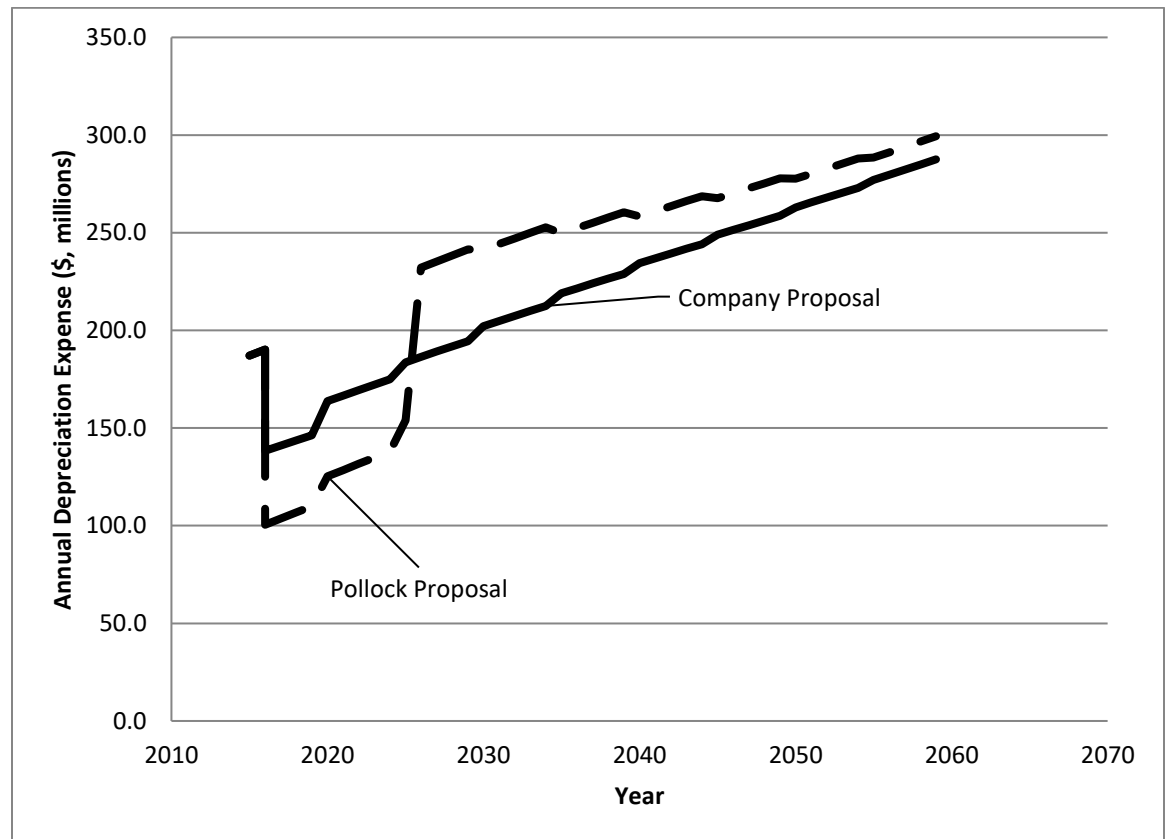
7 For DE Progress' distribution plant accounts (which is the function of plant
8 with the largest theoretical reserve imbalance), I have modeled the impact of Mr.
9 Pollock's proposal and the Company's proposal in Figure 1 below.¹⁶ This sets forth
10 what the resulting depreciation expense will be in each year going forward for
11 distribution plant only. The Company's use of the remaining life technique is shown
12 in the solid black line, and the proposal of Mr. Pollock for an accelerated
13 amortization of the theoretical reserve imbalance is shown in the dashed black line.

14 As the figure demonstrates, the remaining life technique allocates costs
15 evenly over the remaining life of the assets.¹⁷ That is, the remaining life technique
16 represents the straight line recovery of unrecovered costs over the remaining life of
17 the assets. Thus, going forward different generations of customers will pay a similar
18 depreciation charge in each year. No generation of customers will be favored.

¹⁶ The calculations in Figure 1 are based on the December 31, 2016 balances used the depreciation study. While the actual timing of the implementation of depreciation rates and Mr. Pollock's proposal will differ somewhat from this analysis, the overall recovery pattern will be the same.

¹⁷ The lines for both recommendations increase over time due to the growth in plant balances. Straight line recovery therefore results in a gradually increasing straight line, similar to the presentation for the Company proposal.

1

Figure 1

2 **Q. HOW DOES THIS COMPARE WITH THE PROPOSAL OF MR.**
 3 **POLLOCK TO ACCELERATE THE RECOVERY OF A PORTION OF**
 4 **THE THEORETICAL RESERVE IMBALANCE?**

5 A. Figure 5 illustrates that customers who happen to be receiving service for the next
 6 five years will incur significantly lower depreciation expense than any other
 7 generation of customers. Indeed, these fortunate customers will only pay about
 8 two-thirds the expense paid by future generations of customers. Any customer that
 9 enters DE Progress' service territory after Mr. Pollock's 10-year amortization
 10 period will pay significantly higher costs than customers that receive service in the
 11 next five years. Further, after the tenth year there will be a significant increase in

1 depreciation expense under Mr. Pollock's proposal. Depreciation will increase by
2 more than 50 percent at that point in time.

3 **Q. IS THE RESULT OF MR. POLLOCK'S PROPOSAL APPROPRIATE?**

4 A. No. Figure 1 demonstrates that no matter the opinion of what has occurred in the
5 past, Mr. Pollock's proposal to accelerate the amortization of the theoretical reserve
6 imbalance will result in higher deprecation rates for customers in the future. This
7 is one reason that the remaining life technique is so widely used and accepted.

8 **Q. MR. POLLOCK PRESENTS AN EXAMPLE IN POLLOCK EXHIBIT 5**
9 **THAT HE CLAIMS "ILLUSTRATES HOW AMORTIZING A**
10 **DEPRECIATION SURPLUS WOULD RESTORE**
11 **INTERGENERATIONAL EQUITY." DOES HIS EXAMPLE OF**
12 **AMORTIZING A THEORETICAL RESERVE IMBALANCE HAVE**
13 **SIMILAR PROBLEMS TO THE EXAMPLE YOU PRESENT ABOVE?**

14 A. Yes. In Mr. Pollock's example, which is presented in Pollock Exhibit 5, customers
15 from Year 11 through Year 15 pay nothing in depreciation expense. This represents
16 a significant windfall to any customer that happens to be receiving service during
17 this time period. Customers from Year 11 to Year 15 effectively pay nothing for
18 the return of the costs of the assets that provide them service. Thus, instead of
19 "illustrating how intergenerational equity would be restored," Mr. Pollock's own
20 example demonstrates how intergenerational inequity directly results from his
21 proposal.

1 **Q. FIGURE 1 PRESENTS THE ANNUAL DEPRECIATION EXPENSE FOR**
2 **DISTRIBUTION ASSETS OF EACH PROPOSAL. WILL AN**
3 **ACCELERATED AMORTIZATION OF THE RESERVE IMBALANCE**
4 **IMPACT ANY OTHER ASPECT OF CUSTOMER RATES?**

5 A. Yes. Mr. Pollock's proposal will reduce the book reserve (as compared to the
6 Company's proposal), resulting in increased rate base. A higher rate base means
7 that the return paid by customers will therefore also be higher, resulting in a higher
8 cost of service. The total cost to customers over the remaining life of the assets
9 currently in service will also be higher under Pollock's proposal due to the rate base
10 impact.

III. CONCLUSION

11 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS IN CLOSING?**

12 A. Mr. Pollock's proposal does not result in an equitable allocation of costs through
13 depreciation expense. Instead, his proposal will result in a subsidy for customers
14 over the next 10 years, which will be followed by a significant increase in
15 depreciation expense and a higher return on rate base. The remaining life
16 depreciation rates I have proposed are based on the predominant approach for
17 addressing theoretical reserve imbalances and result in the most equitable allocation
18 of costs.

19 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

20 A. Yes, it does.